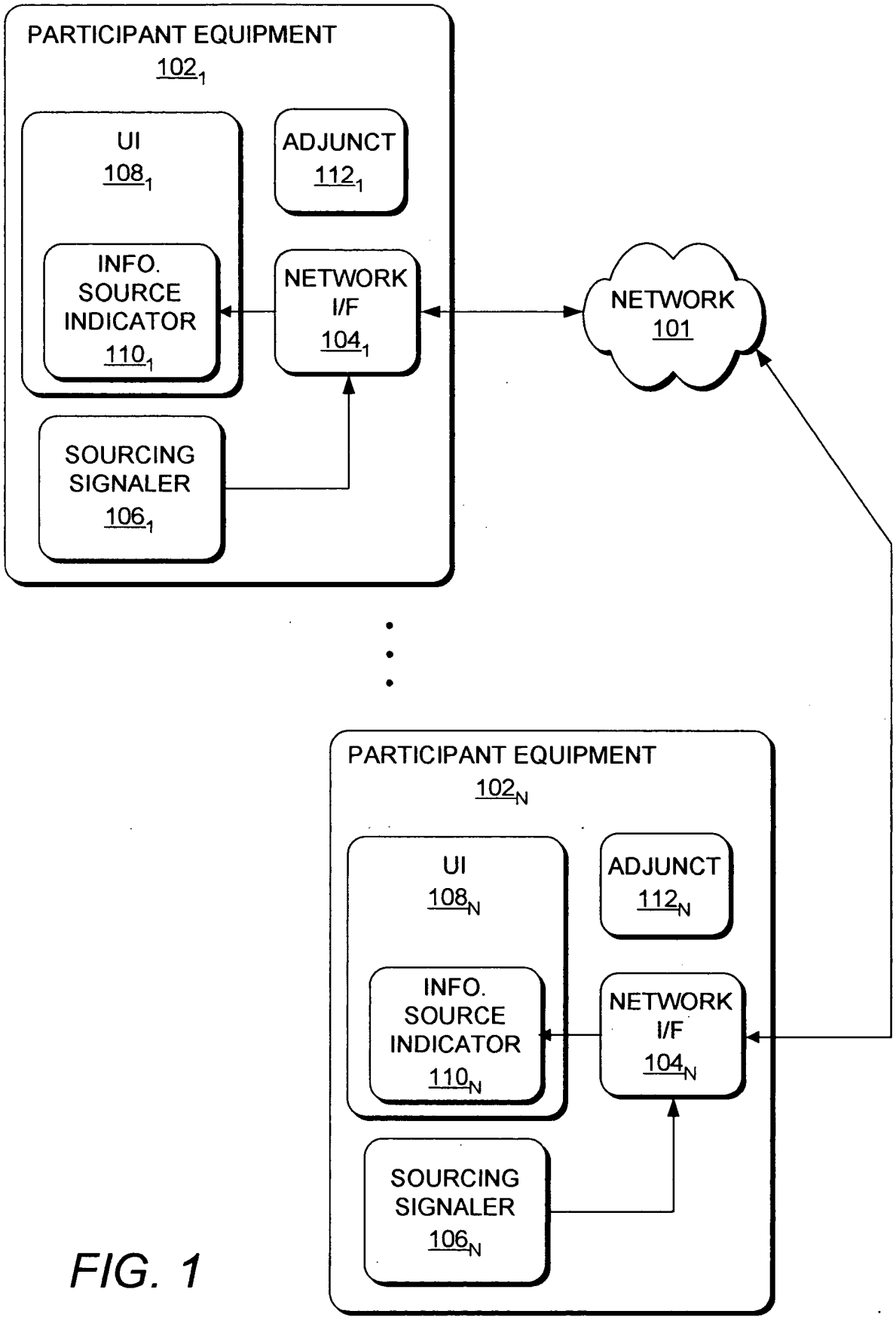
PARTICIPANT EQUIPMENT
102$_1$
UI
108$_1$
ADJUNCT
112$_1$
INFO. SOURCE INDICATOR
110$_1$
NETWORK I/F
104$_1$
SOURCING SIGNALER
106$_1$
NETWORK
101
PARTICIPANT EQUIPMENT
102$_N$
UI
108$_N$
ADJUNCT
112$_N$
INFO. SOURCE INDICATOR
110$_N$
NETWORK I/F
104$_N$
SOURCING SIGNALER
106$_N$

FIG. 1

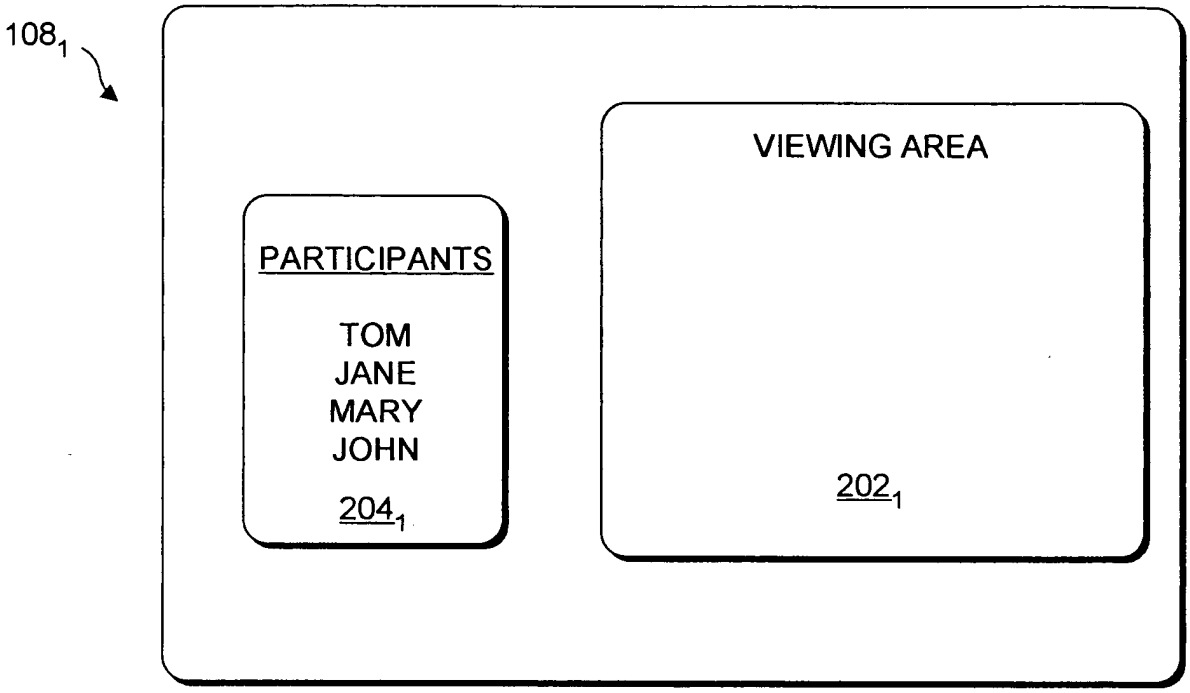
108_1
PARTICIPANTS
TOM
JANE
MARY
JOHN
204_1
VIEWING AREA
202_1

FIG. 2

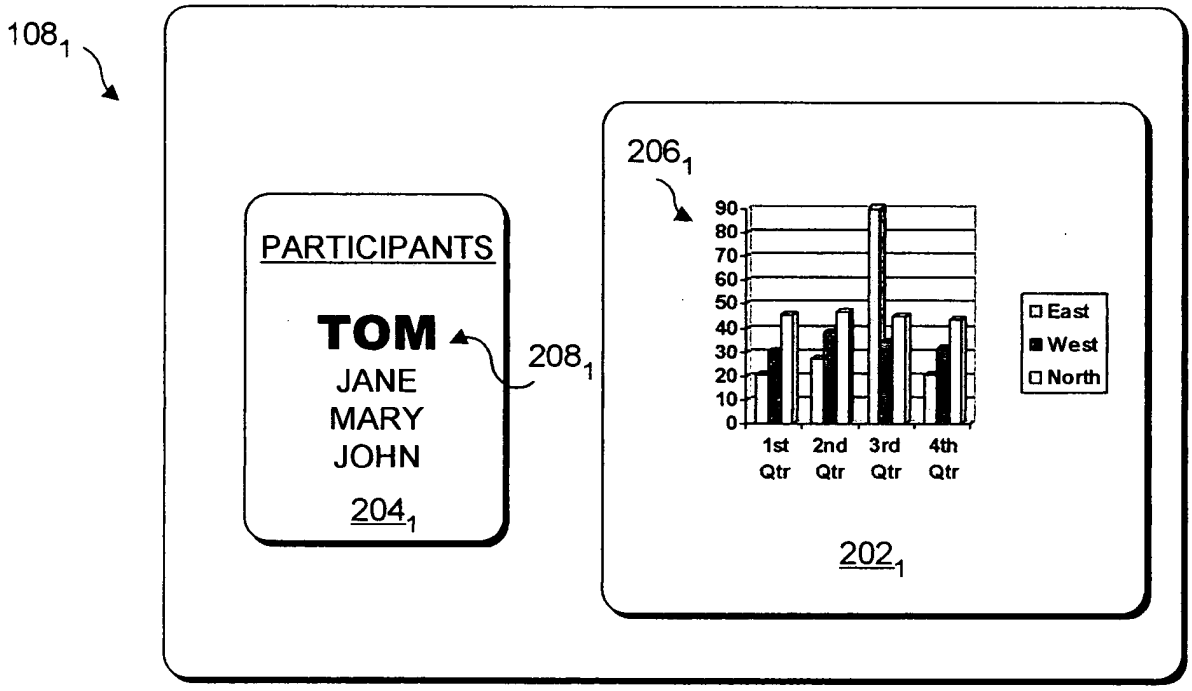
108_1
PARTICIPANTS
TOM
JANE
MARY
JOHN
204_1
208_1
206_1
90
80
70
60
50
40
30
20
10
0
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr
East
West
North
202_1

FIG. 2A

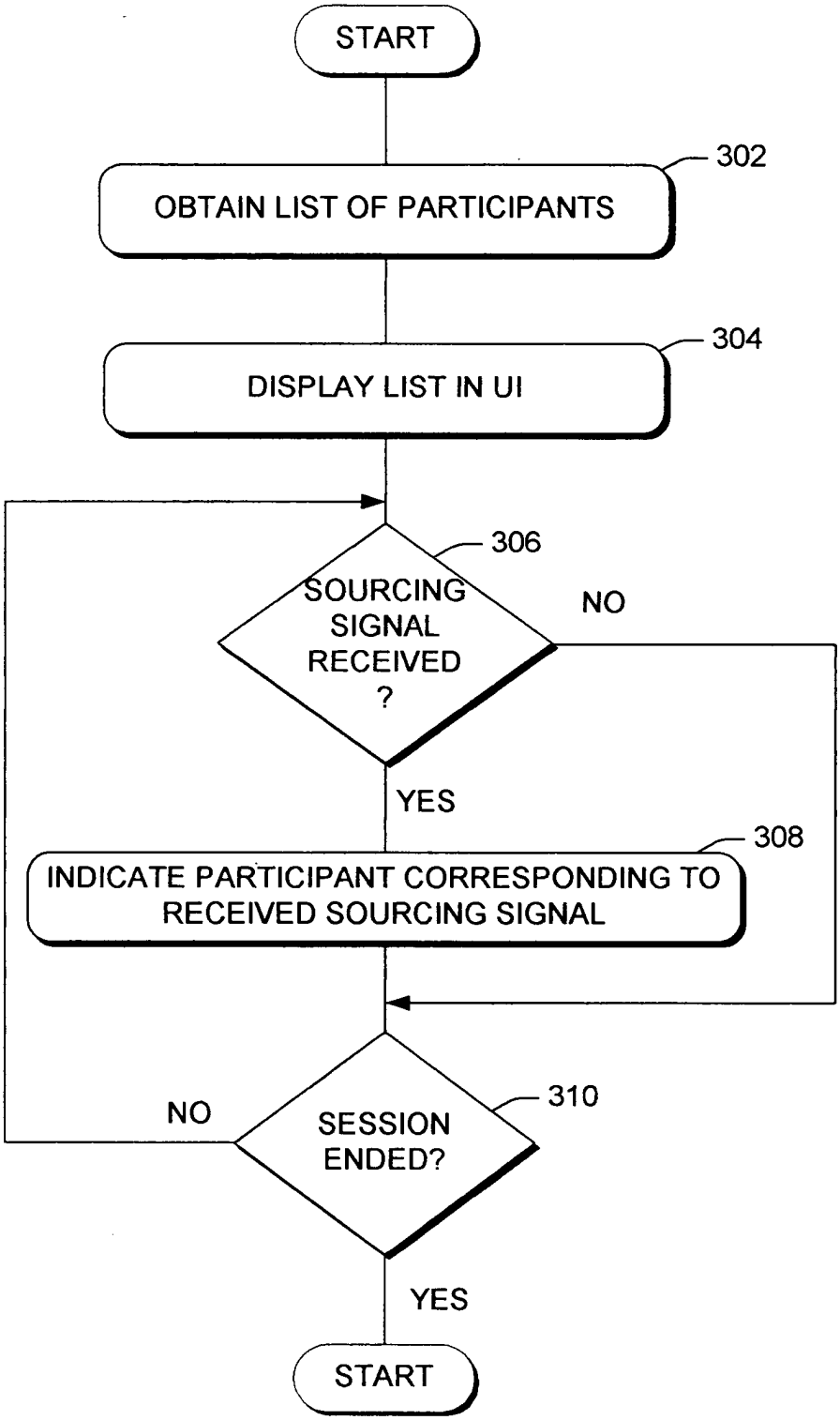
START
302
OBTAIN LIST OF PARTICIPANTS
304
DISPLAY LIST IN UI
306
SOURCING SIGNAL RECEIVED ?
NO
YES
308
INDICATE PARTICIPANT CORRESPONDING TO RECEIVED SOURCING SIGNAL
310
SESSION ENDED?
NO
YES
START

FIG. 3

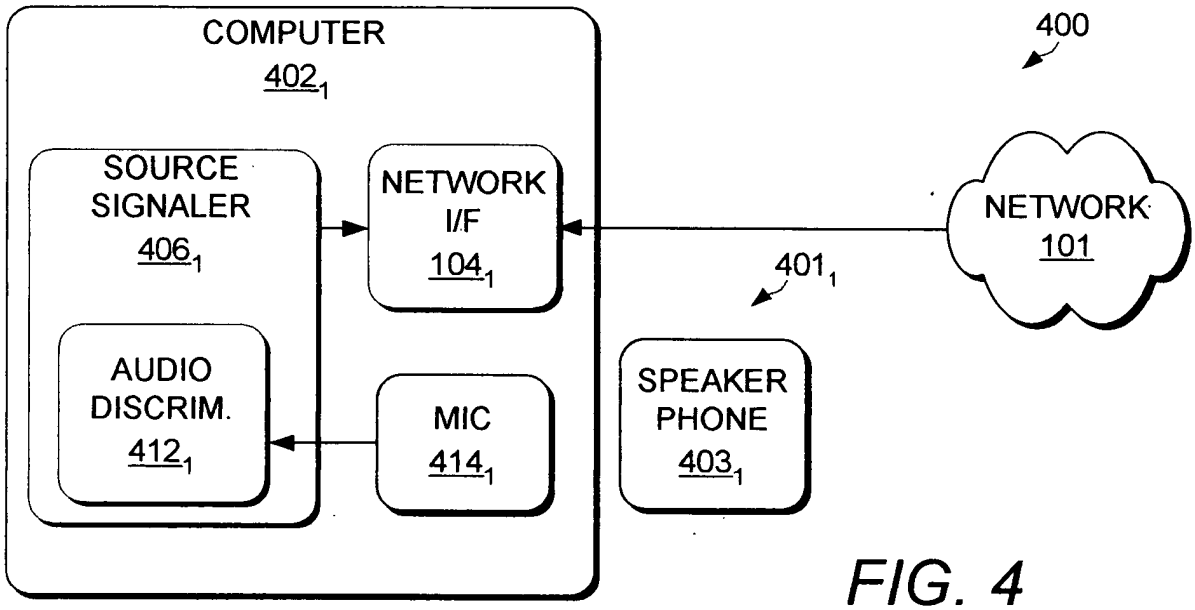

FIG. 4

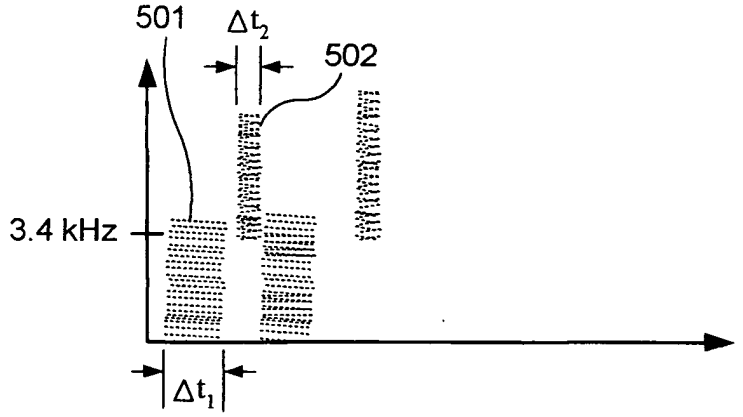

FIG. 5A

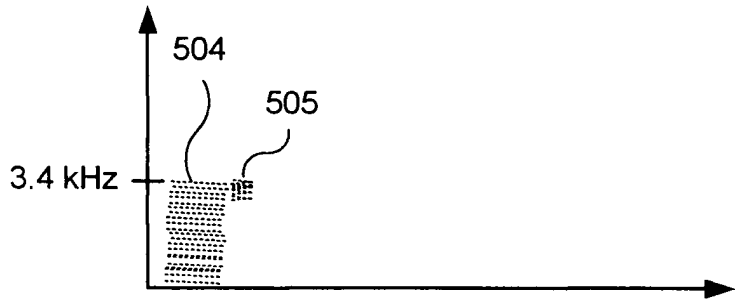

FIG. 5B

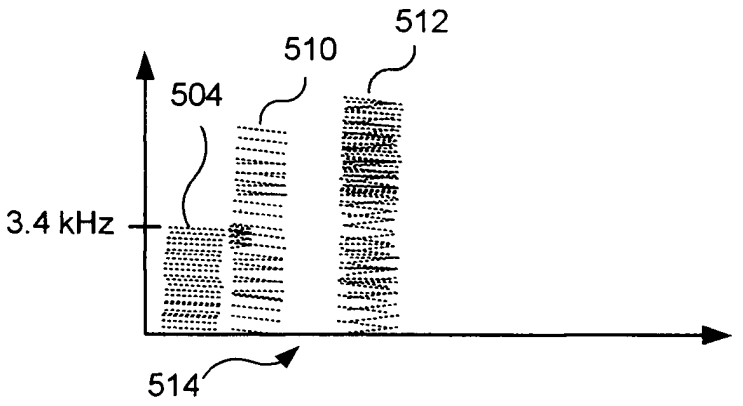

FIG. 5C

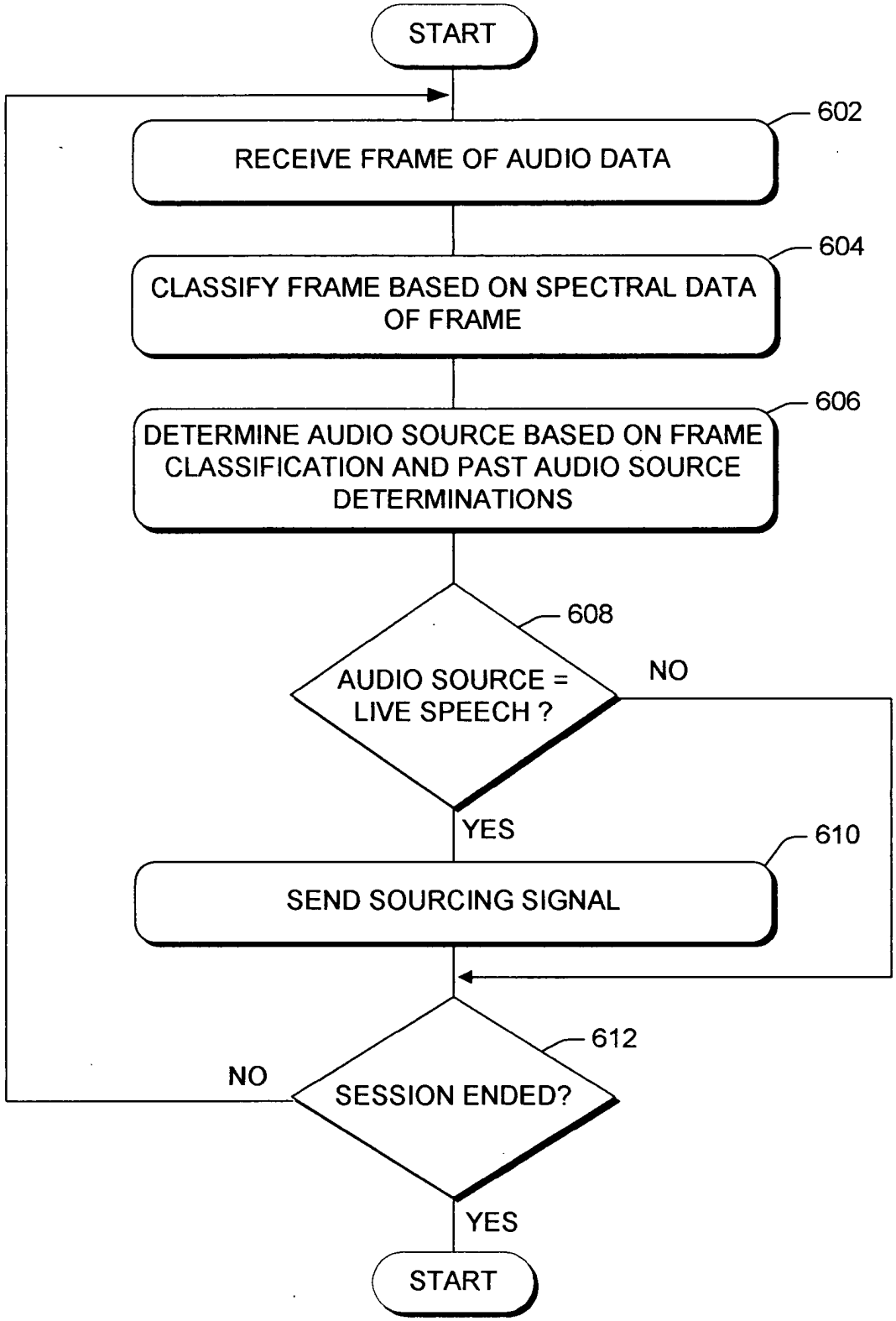
START
602
RECEIVE FRAME OF AUDIO DATA
604
CLASSIFY FRAME BASED ON SPECTRAL DATA OF FRAME
606
DETERMINE AUDIO SOURCE BASED ON FRAME CLASSIFICATION AND PAST AUDIO SOURCE DETERMINATIONS
608
AUDIO SOURCE = LIVE SPEECH ?
NO
YES
610
SEND SOURCING SIGNAL
612
SESSION ENDED?
NO
YES
START

FIG. 6

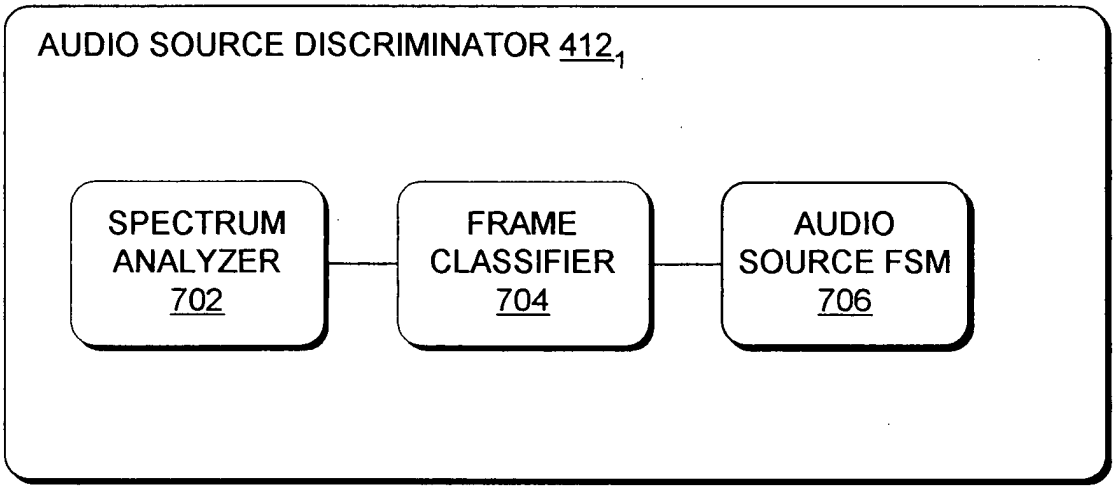
AUDIO SOURCE DISCRIMINATOR 412$_1$
SPECTRUM ANALYZER 702
FRAME CLASSIFIER 704
AUDIO SOURCE FSM 706

FIG. 7

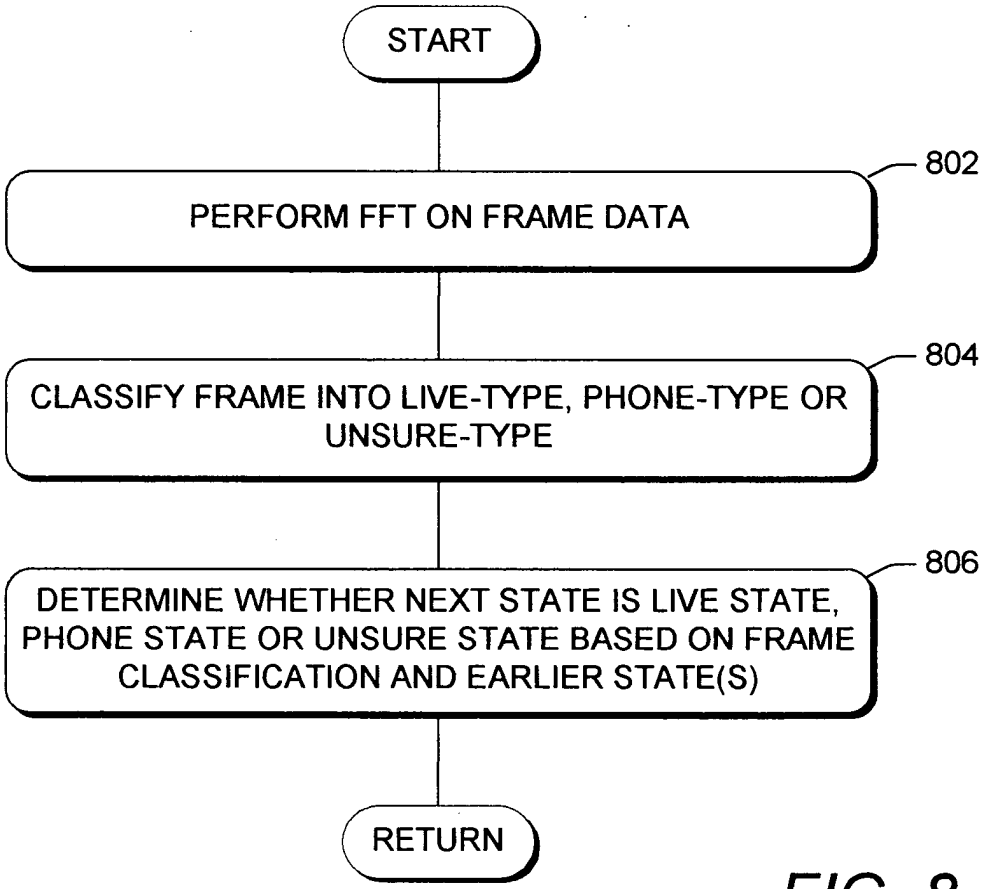
START
PERFORM FFT ON FRAME DATA
802
CLASSIFY FRAME INTO LIVE-TYPE, PHONE-TYPE OR UNSURE-TYPE
804
DETERMINE WHETHER NEXT STATE IS LIVE STATE, PHONE STATE OR UNSURE STATE BASED ON FRAME CLASSIFICATION AND EARLIER STATE(S)
806
RETURN

FIG. 8

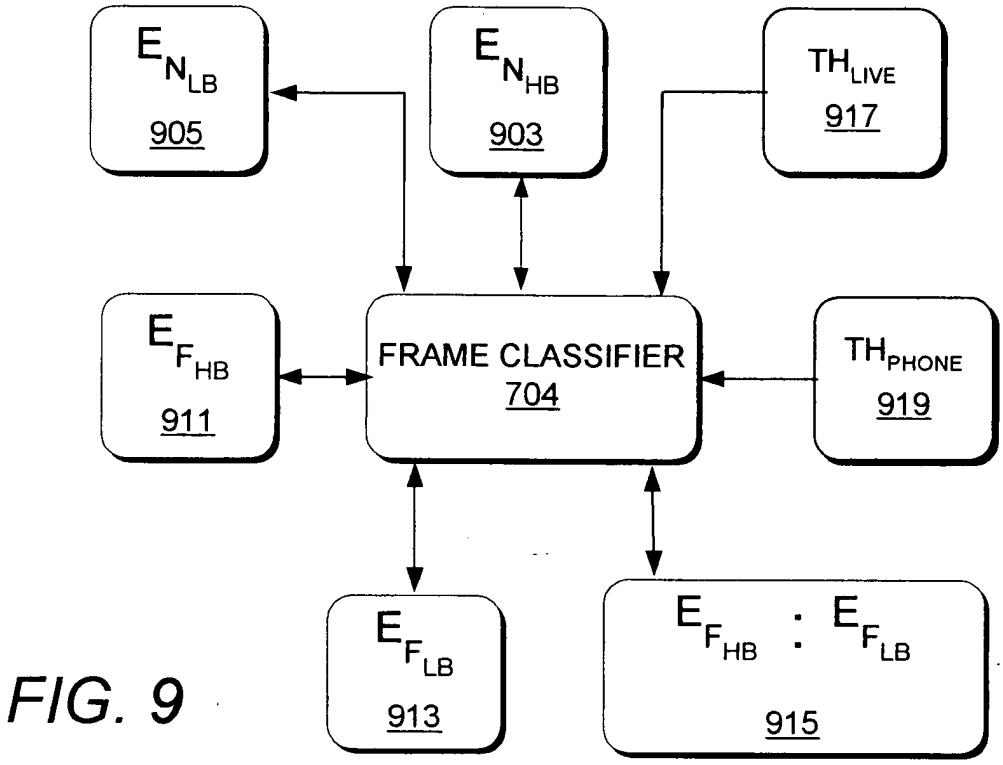
$E_{N_{LB}}$
905
$E_{N_{HB}}$
903
TH_{LIVE}
917
$E_{F_{HB}}$
911
FRAME CLASSIFIER
704
TH_{PHONE}
919
$E_{F_{LB}}$
913
$E_{F_{HB}} : E_{F_{LB}}$
915

FIG. 9

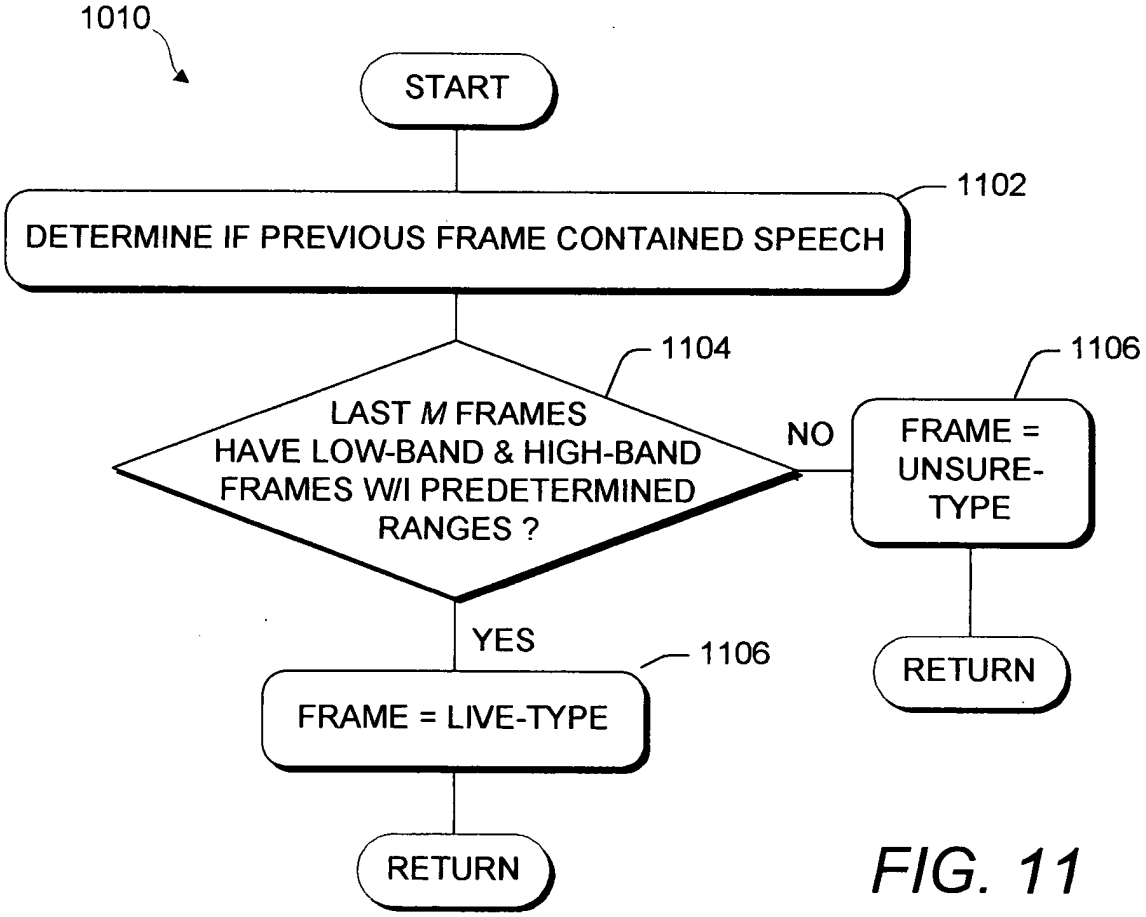
1010
START
DETERMINE IF PREVIOUS FRAME CONTAINED SPEECH
1102
1104
LAST *M* FRAMES HAVE LOW-BAND & HIGH-BAND FRAMES W/I PREDETERMINED RANGES ?
NO
1106
FRAME = UNSURE-TYPE
YES
1106
FRAME = LIVE-TYPE
RETURN
RETURN

FIG. 11

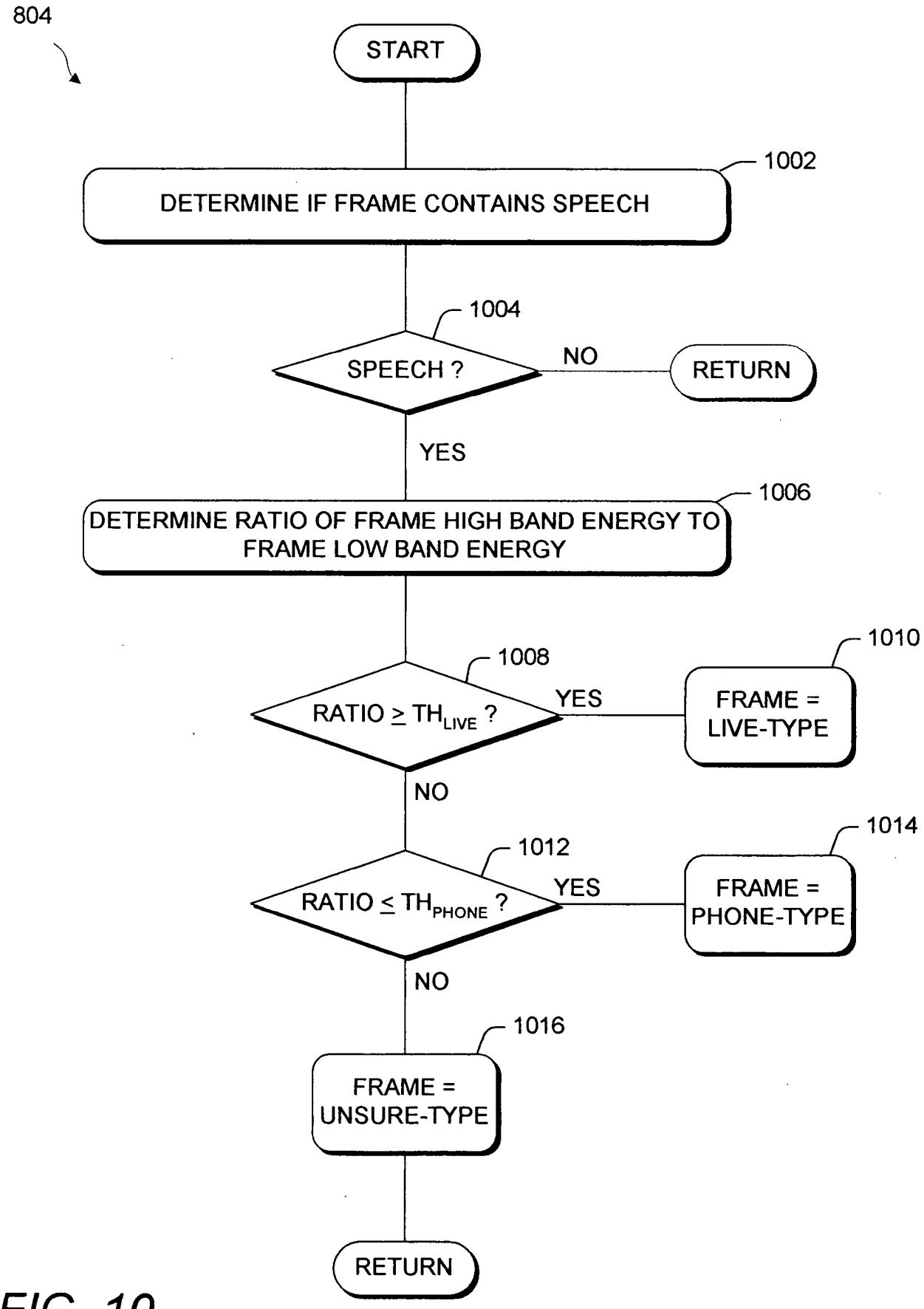
804
START
1002
DETERMINE IF FRAME CONTAINS SPEECH
1004
SPEECH ?
NO
RETURN
YES
1006
DETERMINE RATIO OF FRAME HIGH BAND ENERGY TO FRAME LOW BAND ENERGY
1008
RATIO ≥ TH_LIVE ?
YES
1010
FRAME = LIVE-TYPE
NO
1012
RATIO ≤ TH_PHONE ?
YES
1014
FRAME = PHONE-TYPE
NO
1016
FRAME = UNSURE-TYPE
RETURN

FIG. 10

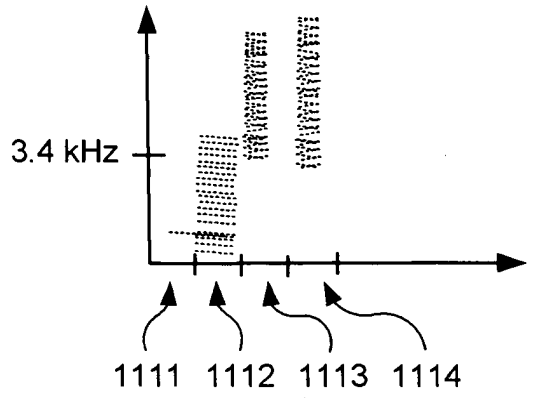

FIG. 11A

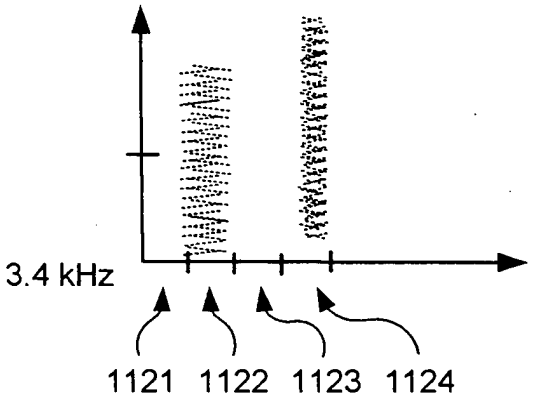

FIG. 11B

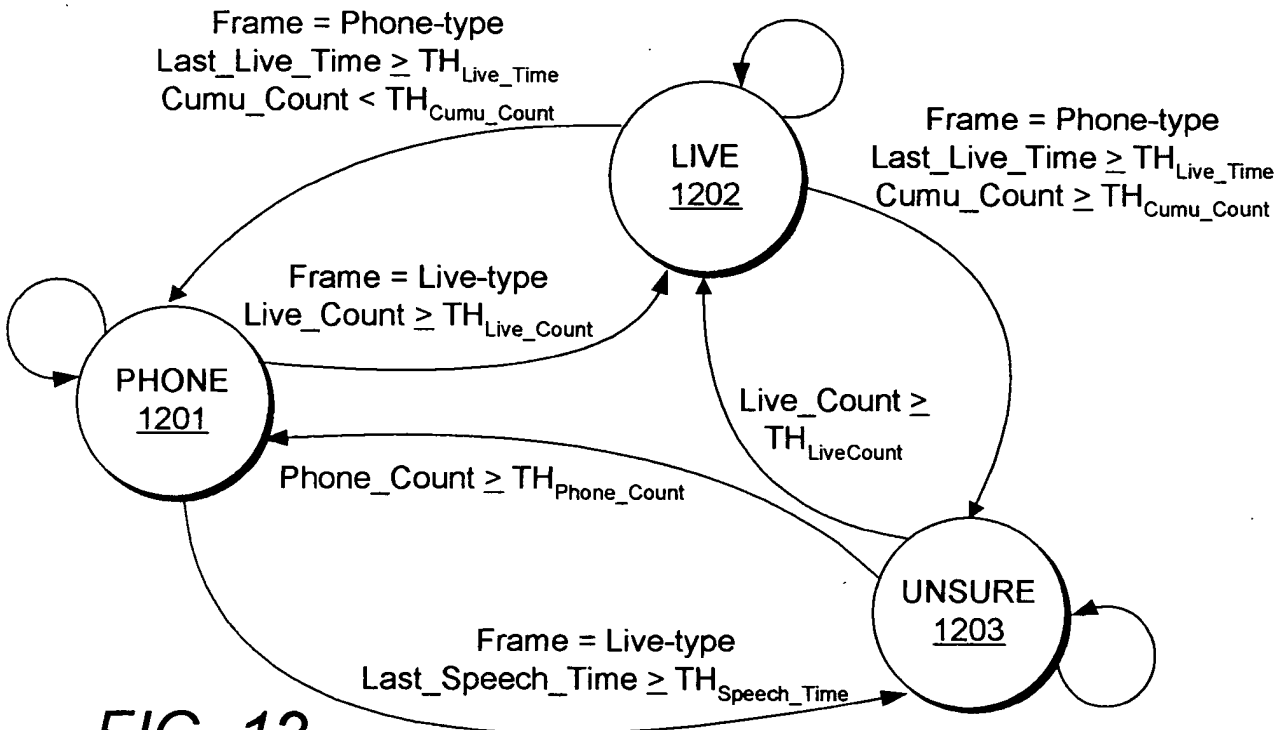

FIG. 12

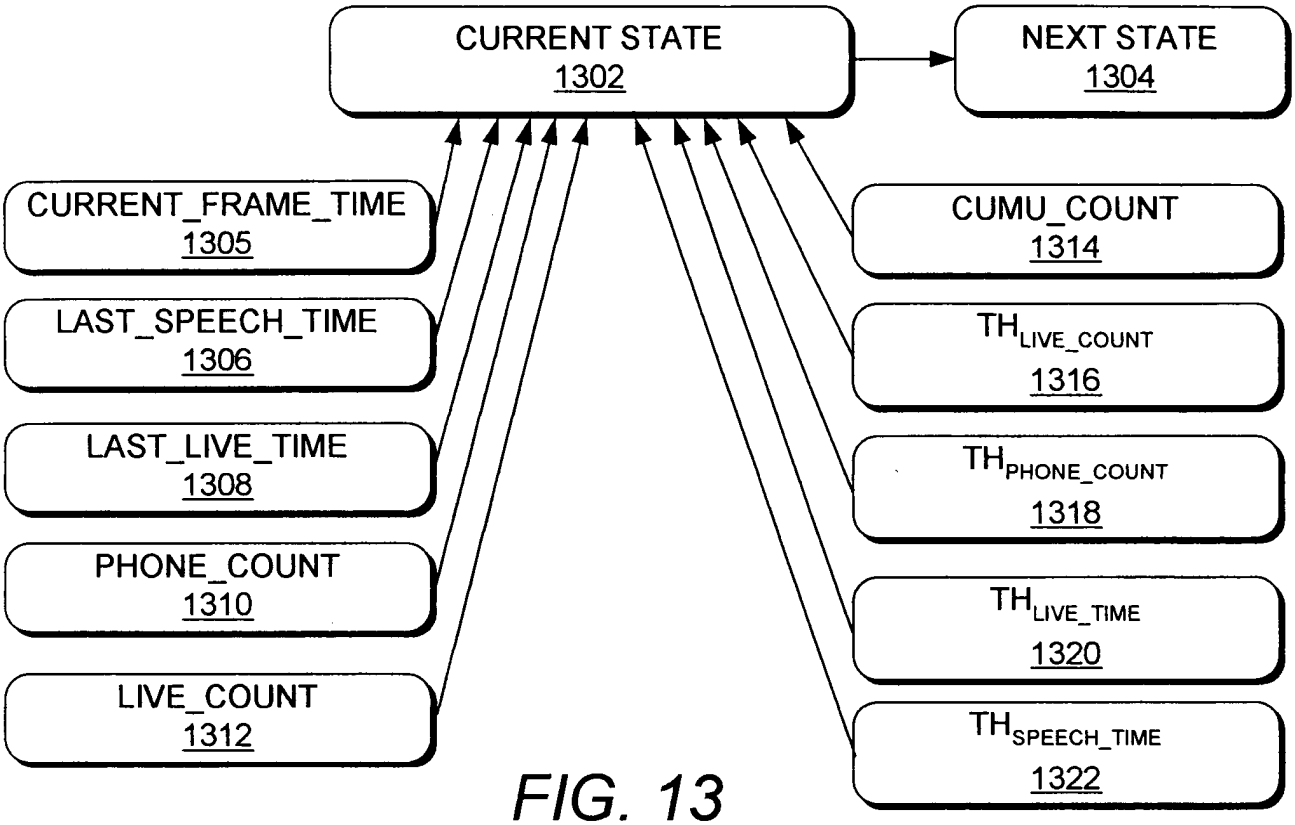
CURRENT STATE
1302
NEXT STATE
1304
CURRENT_FRAME_TIME
1305
LAST_SPEECH_TIME
1306
LAST_LIVE_TIME
1308
PHONE_COUNT
1310
LIVE_COUNT
1312
CUMU_COUNT
1314
TH LIVE_COUNT
1316
TH PHONE_COUNT
1318
TH LIVE_TIME
1320
TH SPEECH_TIME
1322

FIG. 13

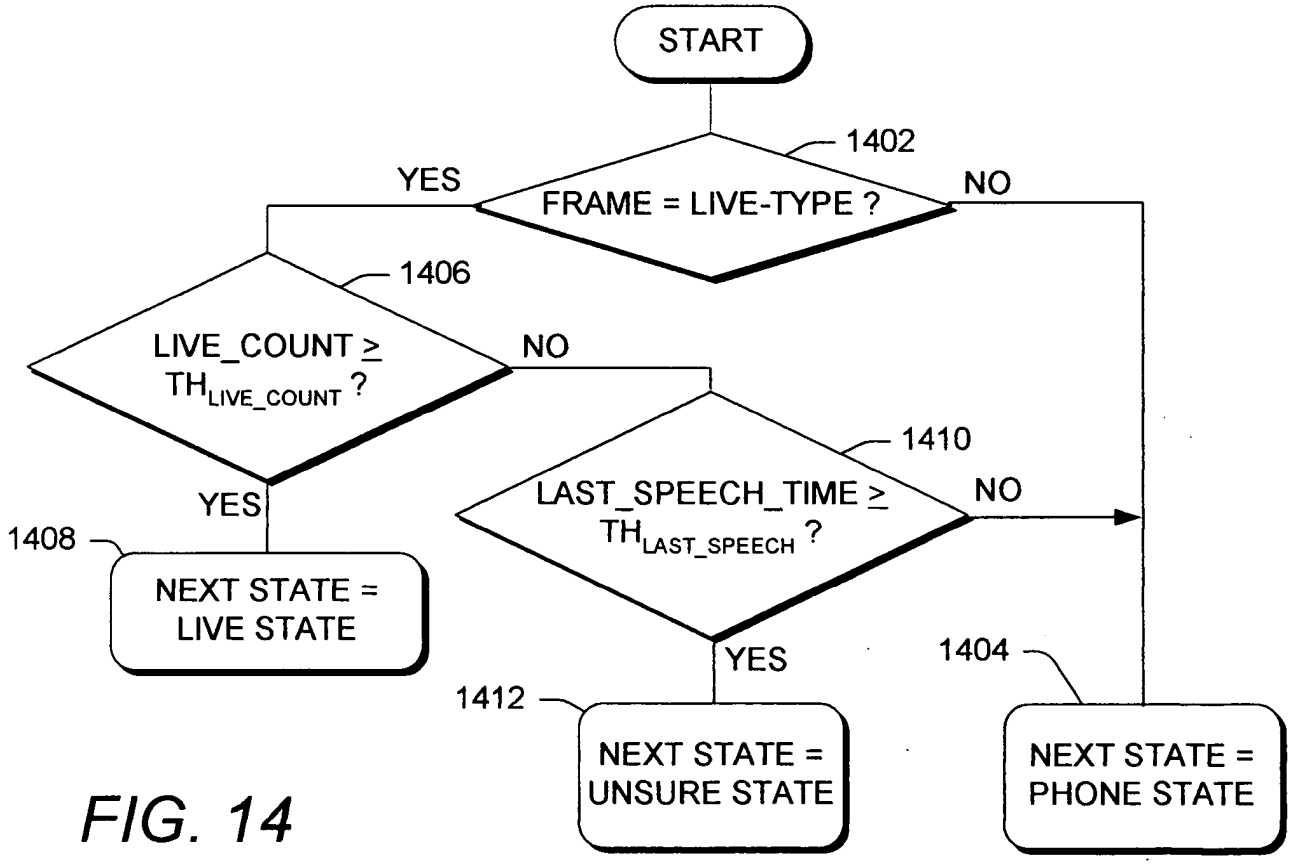
START
1402
FRAME = LIVE-TYPE ?
YES
NO
1406
LIVE_COUNT ≥ TH LIVE_COUNT ?
NO
YES
1408
NEXT STATE = LIVE STATE
1410
LAST_SPEECH_TIME ≥ TH LAST_SPEECH ?
NO
YES
1412
NEXT STATE = UNSURE STATE
1404
NEXT STATE = PHONE STATE

FIG. 14

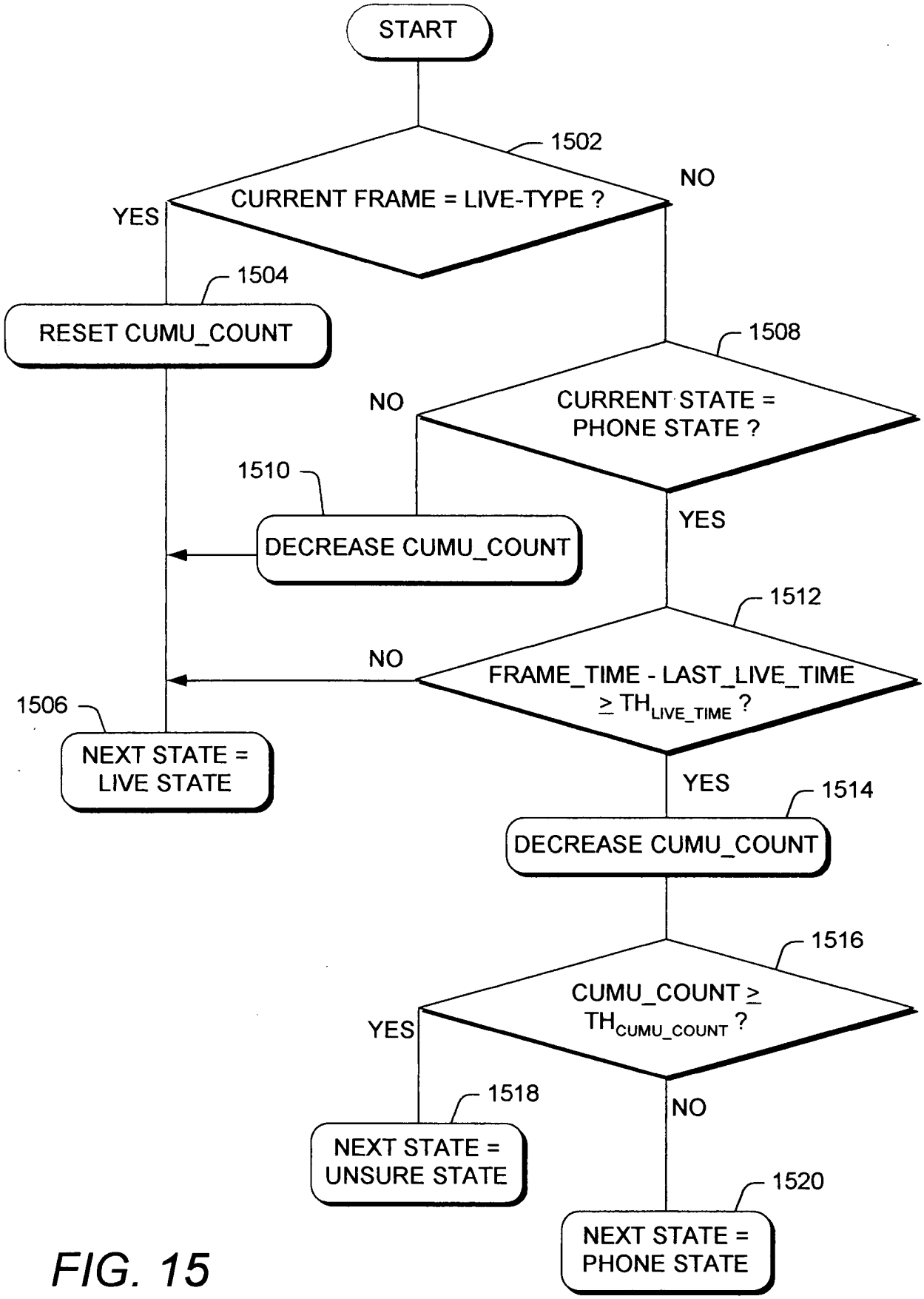
START
1502
CURRENT FRAME = LIVE-TYPE ?
YES
NO
1504
RESET CUMU_COUNT
1508
CURRENT STATE = PHONE STATE ?
NO
YES
1510
DECREASE CUMU_COUNT
1512
FRAME_TIME - LAST_LIVE_TIME ≥ TH_LIVE_TIME ?
NO
YES
1506
NEXT STATE = LIVE STATE
1514
DECREASE CUMU_COUNT
1516
CUMU_COUNT ≥ TH_CUMU_COUNT ?
YES
NO
1518
NEXT STATE = UNSURE STATE
1520
NEXT STATE = PHONE STATE

FIG. 15

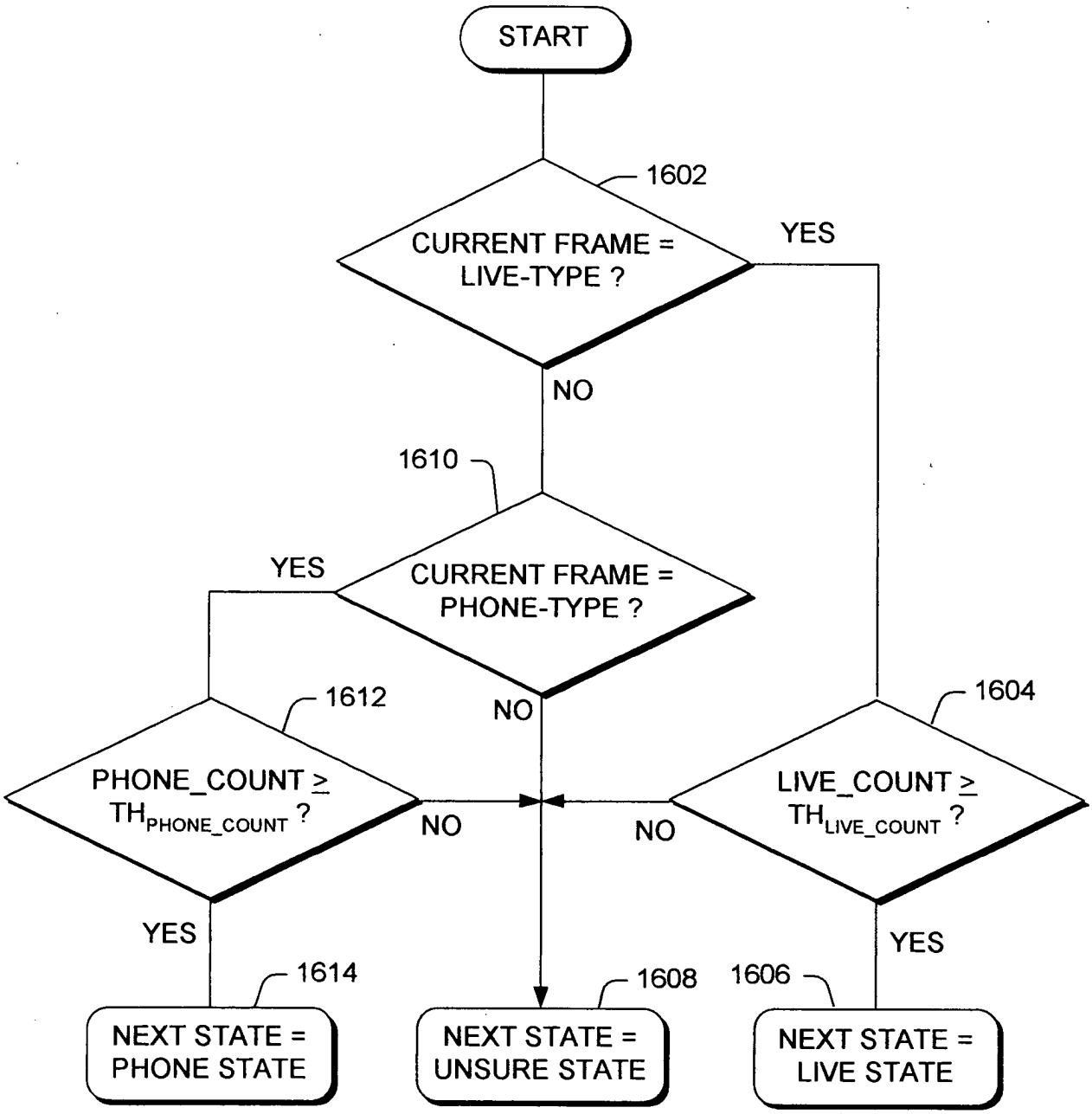
START
1602
CURRENT FRAME = LIVE-TYPE ?
YES
NO
1610
CURRENT FRAME = PHONE-TYPE ?
YES
NO
1612
PHONE_COUNT ≥ TH_PHONE_COUNT ?
NO
YES
1614
NEXT STATE = PHONE STATE
1604
LIVE_COUNT ≥ TH_LIVE_COUNT ?
NO
YES
1606
NEXT STATE = LIVE STATE
1608
NEXT STATE = UNSURE STATE

FIG. 16

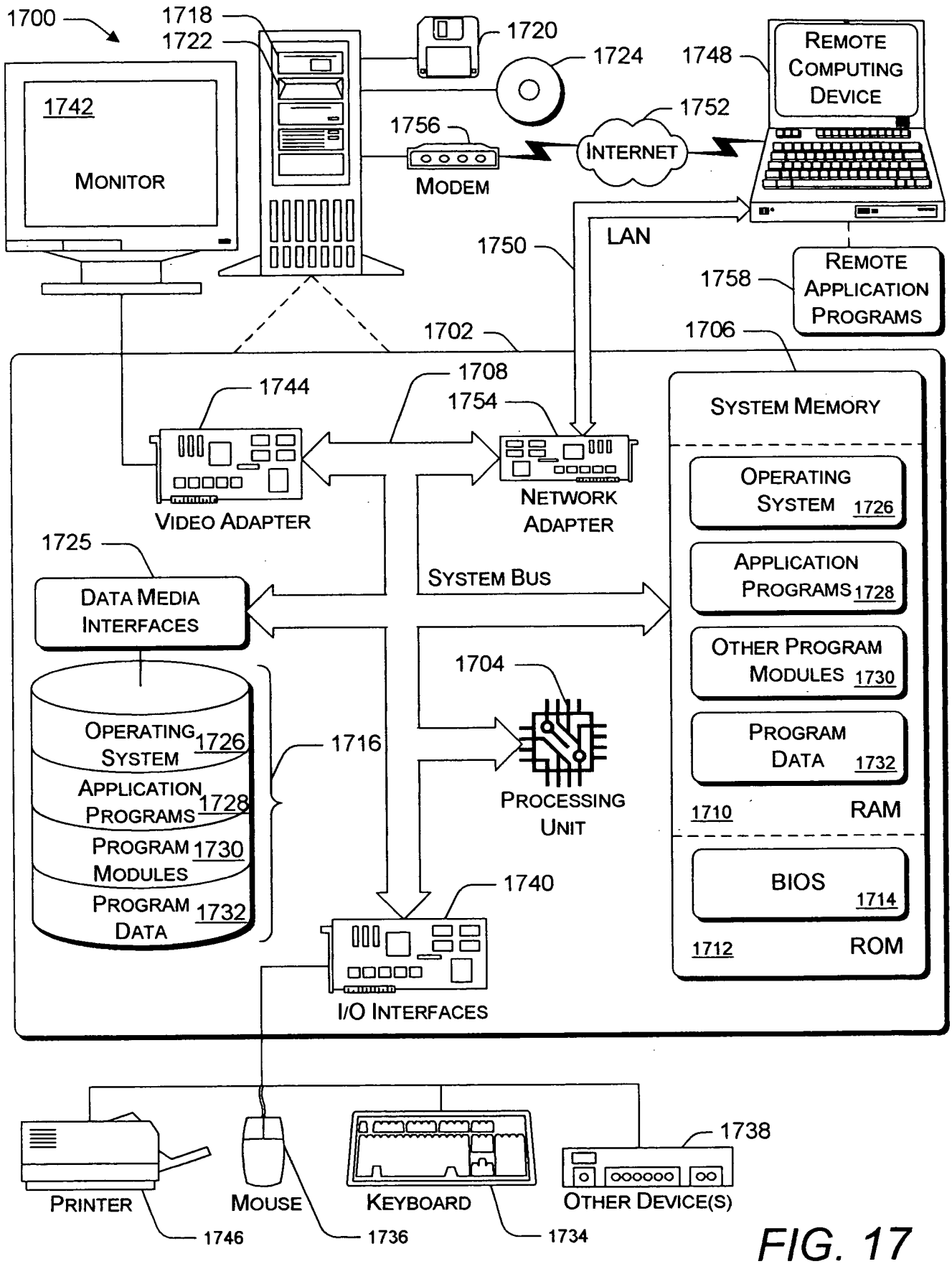
1700
1718
1722
1720
1724
1748
REMOTE COMPUTING DEVICE
1742
MONITOR
1752
1756
INTERNET
MODEM
LAN
1750
1758
REMOTE APPLICATION PROGRAMS
1702
1706
1708
1744
1754
SYSTEM MEMORY
VIDEO ADAPTER
NETWORK ADAPTER
OPERATING SYSTEM 1726
1725
APPLICATION PROGRAMS 1728
DATA MEDIA INTERFACES
SYSTEM BUS
OTHER PROGRAM MODULES 1730
1704
PROGRAM DATA 1732
OPERATING SYSTEM 1726
1716
APPLICATION PROGRAMS 1728
PROCESSING UNIT
1710
RAM
PROGRAM MODULES 1730
PROGRAM DATA 1732
1740
BIOS 1714
1712
ROM
I/O INTERFACES
1738
PRINTER
MOUSE
KEYBOARD
OTHER DEVICE(S)
1746
1736
1734

FIG. 17